

REMARKS-General

1. The newly drafted independent claim 17 and 19 incorporate all structural limitations of the previously presented claims 10 and 13 and include further limitations previously brought forth in the disclosure. No new matter has been included. All new claims 17-22 are submitted to be of sufficient clarity and detail to enable a person of average skill in the art to make and use the instant invention, so as to be pursuant to 35 USC 112.

2. With regard to the rejection of record based on prior art, Applicant will advance arguments to illustrate the manner in which the invention defined by the newly introduced claims is patentably distinguishable from the prior art of record. Reconsideration of the present application is requested.

Response to Rejection of Claims 10-16 under 35USC103

3. The Examiner rejected claims 10-16 under 35USC103(a) as being unpatenable over Maus (US 6,534,021) in view of Elbers (US 4,537,812). Pursuant to 35 U.S.C. 103:

“(a) A patent may not be obtained though the invention is **not identically** disclosed or described as set forth in **section 102 of this title**, if the **differences** between the subject matter sought to be patented and the prior art are such that the **subject matter as a whole would have been obvious** at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.”

4. In view of 35 U.S.C. 103(a), it is apparent that to be qualified as a prior art under 35USC103(a), the prior art must be cited under 35USC102(a)~(g) but the disclosure of the prior art and the invention are not identical and there are one or more differences between the subject matter sought to be patented and the prior art. In addition, such differences between the subject matter sought to be patented **as a whole** and the prior art are obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains.

5. In other words, the differences between the subject matter sought to be patent as a whole of the instant invention and Maus which is qualified as prior art of the instant invention under 35USC102(b) are obvious in view of Elbers at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains.

6. The applicant respectfully submits that the differences between the instant invention and Maus are not obvious in view of Elbers under 35USC103(a), due to the reasons explained below.

7. Regarding the newly drafted claim 17, Maus and Elbers fail to anticipate a fluid filter comprising an outer casing; a filter assembly which is received within the outer casing, and comprises a plurality of corrugated filtering plates; and a plurality of flat filtering plates alternated into the corrugated filtering plates to overlap with corrugated filtering plates in a "Z" shape manner so as to form a filter stack of the flat filtering plates and the corrugated filtering plates, wherein each of the corrugated filtering plates has two side plain edges and a corrugated ridge, wherein each of the corrugated filtering plates is respectively welded onto a pair of the neighboring flat filtering plates at opposed edges, such that two sides of the filter stack are enclosed with a "Z" shaped ending respectively as a fluid inlet and a fluid outlet, wherein a height of each layer of the filter stack is ranged between 2-10 mm and a crest interval of each of the corrugated filtering plates is ranged between 4-20 mm, wherein the side plain edge is positioned to be aligned with a central portion of the corrugated ridge, or respectively aligned with an upper portion and a lower portion of the corrugated ridge.

8. On the other hand, Maus generally discloses a heat-resistant and regeneratable filter body for retaining particles from a gas flow flowing through the filter body, comprising: layers of gas-impermeable material forming flow guide surfaces defining mutually separate flow paths dividing a gas flow into a plurality of mutually separate partial gas flows and guiding the plurality of partial gas flows in a flow direction; and at least two filter devices including a first filter device and a second filter device disposed in succession in the flow direction in each of the mutually separate flow paths such that each of the partial gas flows first passes through the first filter device and then passes through the second filter device, the at least two filter devices having different filter openings with sizes decreasing in the flow direction, and at

least one of the at least two filter devices being formed of alternate layers of filter material and the layers of gas-impermeable material (Manu, claim 1).

9. In the instant invention, the flow path of the gas within the fluid filter is not predetermined by a plurality of mutually separate flow paths. As a result, the fluid flow within the fluid filter is random in nature and cannot be predetermined.

10. In Maus, the filter devices have filter openings with sizes decreasing in the direction of the flow direction, and that the layers of gas-impermeable material deflect the gas flow more than two times (Maus, Claims 2-3). In other words, the effectiveness of Manus filter depends on the filtering effect of each of the predetermined flow path. If the flow path within the fluid filter is random in nature, the structure disclosed in Maus is simply inapplicable. Moreover, restricting filtering mechanism through a plurality of predetermined filtering paths substantially increases the overall size of the filtering device.

11. Moreover, when there exists a plurality of filtering processes with each particular flow path (like Maus), the overall resistance of air flow of the filter would be substantially increased. This substantial air resistance prohibits the filter from having a wide range of applications, because air flow resistance may adversely affect the machines or devices on which the filter is installed. When air flow within the fluid filter is substantially random in nature, there overall resistance of air flow can be minimized.

12. In Maus, air within a particular air flow path would be subject to a plurality of filtering by filters of different performances. In other words, each of the filters has different number and density of filter openings. In the instant invention, each of the flat filtering plates is alternated into the corrugated filtering plates to overlap with corrugated filtering plates in a **"Z" shape** manner so as to form a filter stack of the flat filtering plates and the corrugated filtering plates **having uniform filtering performance**. Furthermore, there is no "Z" shaped structure disclosed in Maus.

13. On the other hand, Elbers generally discloses an improved corrugated sheet aluminum spacer for use in pleated media air filters is disclosed. The spacers are folded in zig zag fashion along one edge in a succession of V formations having a first height and width, and along the opposite edge in a succession of V formations having both heights and widths approximately one-fifth of the first height and width. Since the

fold lines are substantially parallel, there are five V formations within a given width of the opposite edge for each one along the first edge, the fold lines of the intermediate V formations extending from the second edge only a portion of the distance to the first edge, but preferably about 90% of the length of the sheet. The V formations are formed by passing the aluminum between a pair of rolls with forming blades having overlapping edges which engage the sheet. The height or amplitude of the V formations at the small end is on the order of 0.03 to 0.04 inches in aluminum sheet having a thickness of 1 to 2 mils, preferably 0.0015 inches. The 5 to 1 ratio of V formations along opposite edges is achieved by polishing the surfaces of the forming blades which contact the sheet to a degree providing surface irregularities of not more than about 10 microinches.

14. The applicant would like to reiterate that Elbers merely discloses corrugated spacer for an air filter, and not a fluid filter itself. Moreover, the corrugated spacer is used in an air filter. The fluid filter of the instant invention, however, relates to filter for oily particulates. The technology and requirement in this two filtering regimes are totally different.

15. The Examiner appears to reason that since Elbers teaches some sort of filters, it would have been obvious to one skilled in the art to combine Elbers with Maus to produce the instant invention. But this is clearly **not** a proper basis for combining references in making out an obviousness rejection of the present claims. Rather, the invention must be considered as a whole and there must be something in the reference that suggests the combination or the modification. See *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984) ("The claimed invention must be considered as a whole, and the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination"). In the present case, there is no such suggestion. Maus has physical structural differences apart from what is identified by the examiner, while Elbers involves a different kind of filter as compared to the instant invention. As a result, one having ordinary skill in the art would not have combined Elbers with Maus to produce the instant invention. Substantial inventive steps must have been exercised.

16. In hindsight, the Examiner may feel that it would be obvious to combine Elbers with Maus to produce the instant invention. Such hindsight reconstruction is not a

permissible method of constructing a rejection under 35 U.S.C. 103. In re Warner and Warner, 154 USPQ 173, 178 (CCPA 1967). Moreover, it is recognized that a modification which would render the prior art device inoperable indicates the nonobviousness of the modification. Ex parte Weber, 154 USPQ 491 (Pat. Off. Bd. Ap. 1964). In the instant invention, the construction of Maus substantially interferes with an effective use of the fluid filter because of the substantial air resistance in Maus's invention. This provides a disincentive for one having ordinary skill in the art to combine Maus with Elbers.

17. The applicant respectfully submits that from a policy standpoint, competitors of the applicant would not manufacture, sell and use the inventions disclosed in either Elbers or Maus. Rather, they would manufacture, sell and use the instant invention as claimed in the newly drafted claims 17-22. Since the purpose of a developed patent system is to promote technology advancement and encouragement of inventions, it is submitted that the rejections set forth in the Office Action should be withdrawn and patent protection of the instant invention should be granted in order to further the common goal of providing incentives for future development in the relevant area of technology.

18. Applicant believes that for all of the foregoing reasons, all of the claims are in condition for allowance and such action is respectfully requested.

The Cited but Non-Applied References

19. The cited but not relied upon references have been studied and are greatly appreciated, but are deemed to be less relevant than the relied upon references.

20. In view of the above, it is submitted that the claims are in condition for allowance. Reconsideration and withdrawal of the rejection are requested. Allowance of claims 17-22 at an early date is solicited.

21. Should the examiner believe that anything further is needed in order to place the application in condition for allowance, he is requested to contact the undersigned at the telephone number listed below.



Respectfully submitted,

A handwritten signature in black ink, appearing to be "Raymond Y. Chan", written over a horizontal line.

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CERTIFICATE OF MAILING

I hereby certify that this corresponding is being deposited with the United States Postal Service by First Class Mail, with sufficient postage, in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" on the date below.

Date: 05/19/2009

A handwritten signature in black ink, appearing to be "Raymond Y. Chan", written over a horizontal line.

Signature: _____
Person Signing: Raymond Y. Chan